

A.28 Suisun Marsh Aster (*Symphyotrichum lentum*, formerly *Aster lentus*)

A.28.1 Legal Status

Suisun Marsh aster (*Symphyotrichum lentum*, formerly *Aster lentus*) is not listed under either federal or California Endangered Species Acts. Its Heritage Ranking in the California Natural Diversity Database is G2/S2.2, which means that globally (G) and within the state (S) there are either between six to 20 viable element occurrences of this species, 1,000 to 3,000 individuals of this species, or 2,000 to 10,000 acres where this species occurs. The state threat level rank is “threatened.”

The California Native Plant Society (CNPS) List rank of 1B.2 for Suisun Marsh aster indicates that it is rare, threatened, or endangered in California and elsewhere, and is considered by CNPS to be fairly endangered in California with between 20 to 80 percent of occurrences threatened. Plants with a List rank of 1B are considered by the California Native Plant Society to meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the California Fish and Game Code.

A.28.2 Species Distribution and Status

Range and Status

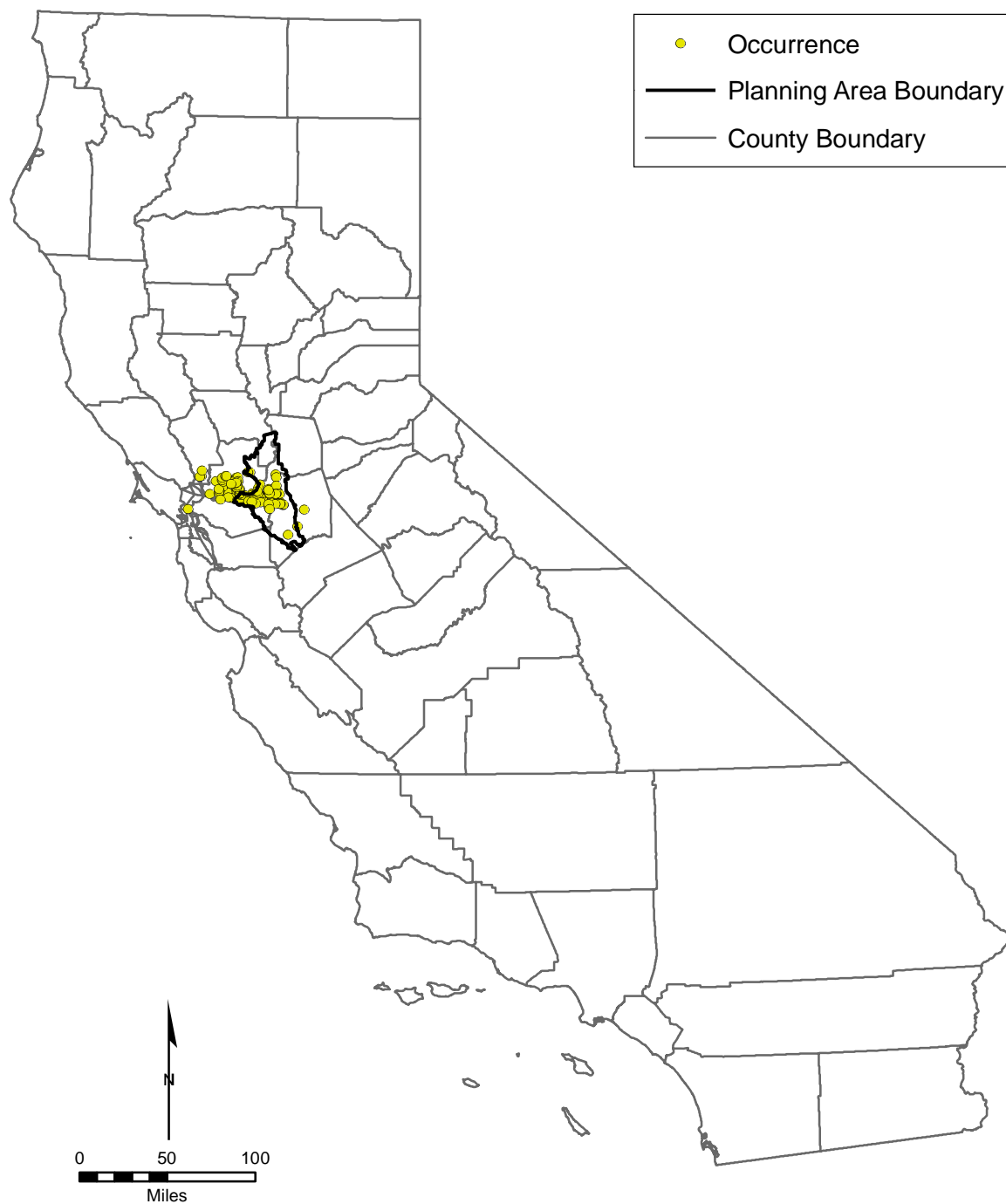
The range of Suisun Marsh aster extends from Napa and Solano counties in the north, to San Joaquin County in the south, to Contra Costa County in the west, and Sacramento County in the east (Figure A.28.1). It is endemic to Suisun Marsh and the Sacramento-San Joaquin Delta (CNDDDB 2008, CNPS 2008). Historically, it was known from marshes in the East Bay portion of San Francisco Bay (California State Coastal Conservancy 2003) and the Sonoma and Napa Rivers (Goals Project 2000).

Distribution and Status in the Planning Area

Within the BDCP Planning Area, Suisun Marsh aster occurs in tidal areas throughout the west and central Delta with scattered occurrences in the north and south Delta (Figure A.28.2). Suisun Marsh aster occurs at the upper margin and immediately above the tidal zones of fresh and brackish marshes and along rivers and creeks. It has been observed on Andrus Island, Terminous Tract, Rindge Tract, Bethel Island, Franks tract, and near Collinsville and Antioch among other locations in the Delta (CNDDDB 2008). A large single occurrence was once reported along Baker Slough and Lindsey Slough on the Calhoun Cut Ecological Reserve, but more recently it has been remapped as several smaller polygons (Witham and Kareofelas 1994) and many new occurrences were mapped in that same area in 1994 (Witham and Kareofelas).

A.28.3 Habitat Requirements and Special Considerations

Suisun Marsh aster grows on the upper margins of brackish and freshwater marshes in the ecotone with terrestrial habitats (Goals Project 2000) and above erosional cuts and along the banks of sloughs and watercourses, often occurring with common reed, cattails, bulrushes, and blackberry (Witham and Kareofelas 1994, May & Associates 2005). A 1994 report from the



Source: California Department of Fish and Game, CNDDDB, 2008.
 Consortium of California Herbaria, 2008.

Figure A.28.1. Suisun Marsh Aster Statewide Recorded Occurrences

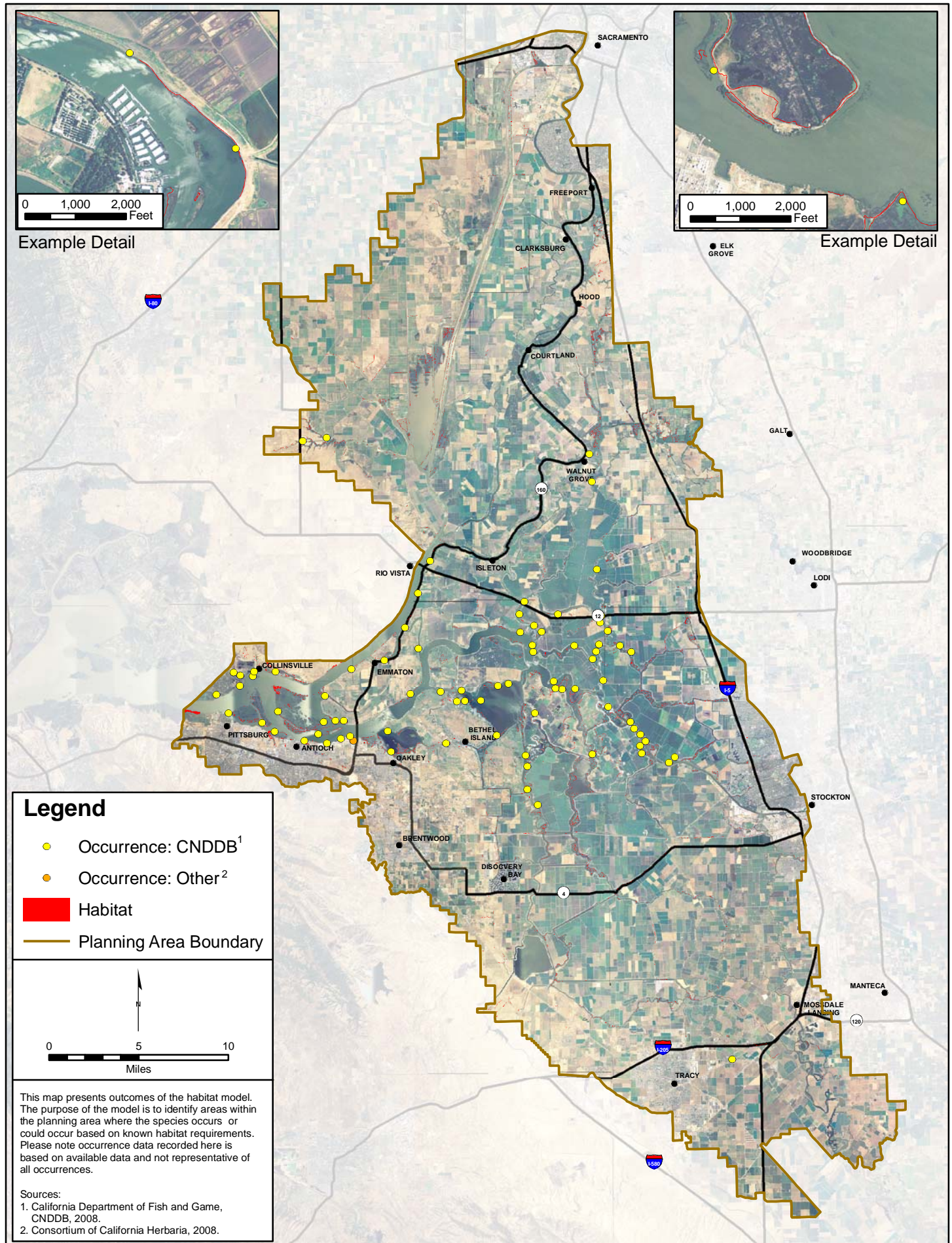


Figure A.28.2. Suisun Marsh Aster Habitat Model and Recorded Occurrences

Calhoun Cut Ecological Reserve noted that many occurrences of Suisun Marsh aster were in relatively shaded areas either along north-facing banks or under overhanging trees (Witham and Kareofelas 1994). It has been observed in close proximity to other rare plant species including Mason's lilaeopsis (*Lilaeopsis masonii*), Delta Tule pea (*Lathyrus jepsonii* var. *jepsonii*), Delta mudwort (*Limosella subulata*), and soft bird's-beak (*Cordylanthus mollis* ssp. *mollis*) (Goals Project 2000, CNPS 2008, CNDDDB 2008).

A.28.4 Life History

Suisun Marsh aster is a perennial, rhizomatous herb in the aster tribe (Astereae) of the sunflower family (Asteraceae) (Hickman 1993). Some occurrences may be single plants with one to several main stems (Witham and Kareofelas 1994). It blooms from May through November, depending on environmental conditions. Suisun Marsh aster stems are 16 to 59 inches tall and have open inflorescences of several flowerheads with purple ray flowers (outer flowers) and yellow centers (disc flowers). Suisun Marsh aster hybridizes with the common California aster (*Aster chilensis*), but it can be recognized by its larger size and flowerheads without hairs on the involucre (leaflike bracts beneath the flowerhead), and its slightly succulent leaves which are thicker than those of the common California aster (Hickman 1993, CNPS 2008). Its vegetative appearance also closely resembles western goldentop (*Euthamia occidentalis*), but they are easily distinguished when flowering as western goldentop flowerheads are all-yellow (Baye 2007). Both the Suisun Marsh aster and the common California aster are local host plants for the Field Crescent butterfly (*Phyciodes campestris*) (Witham and Kareofelas 1994).

A.28.5 Threats and Stressors

Historically, the marsh habitat suitable for Suisun Marsh aster has been lost mostly through development, dredge disposal, agricultural conversion, and diking. Diked marshes generally lack rare tidal marsh species. It is believed that the conditions brought about by dikes favor robust generalist species that can better tolerate the extremes of inundation and dryness in diked wetlands (Goals Project 2000). Such habitat losses from human activities still occur, but many of the large marshes are now parts of preserves or are in highly restrictive development zones. Current threats to Suisun Marsh aster include invasive plants, erosion, creek channelizing, levee maintenance and construction, and possibly herbicide applications (CNDDDB 2008, CNPS 2008).

A.28.6 Relevant Conservation Efforts

The CALFED Bay-Delta Ecosystem Restoration Program Plan's Multi-Species Conservation Strategy designates the Suisun Marsh aster as "Recovery" (CALFED Bay-Delta Program 2000). This means that CALFED has established a goal to recover the species. Recovery is equivalent to the requirements of delisting a species under federal and State ESAs.

Suisun Marsh aster is proposed for coverage under the Solano County Habitat Conservation Plan.

A.28.7 Species Habitat Suitability Model

Habitat. Vegetation types designated as species habitat in this model correspond to the mapped vegetation associations in the BDCP GIS vegetation data layer. Suisun Marsh aster habitat was identified as the area within 10 feet of the landward side of the landward boundaries of Tidal Freshwater Emergent Wetland land cover type throughout the BDCP Planning Area and soft bird's-beak habitat (*Distichlis spicata*-annual grasses, *Distichlis spicata*-*Juncus balticus*,

Distichlis spicata-*Salicornia virginica*, Pickleweed (*Salicornia virginica*), *Salicornia virginica*-*Cotula coronopifolia*, and *Salicornia virginica*-*Distichlis spicata* land cover types west of the Antioch Bridge) exclusively where these landcover types are adjacent to Grassland, Valley Riparian, or Agriculture landcover types.

Assumptions. Historical and current records of this species indicate that its distribution extends throughout most of the BDCP Planning Area having been observed in tidally influenced waters from Calhoun Cut and in the Sacramento River near Walnut Grove southward and from Tom Pain Slough near the southern boundary of the BDCP Planning Area northward (Figure A.28.2) (Witham and Kareofelas 1994, CNDDDB 2008). While there are no occurrences within the BDCP Planning Area north of Calhoun Cut and Walnut Grove patches of suitable habitat extend into those areas. For purposes of this model, a 10 foot-wide buffer on the landward side of the landward boundaries of the Tidal Freshwater Emergent Wetland land and soft bird's-beak habitat (Grewell et al. 2007) is included as the potential extent of habitat that supports Suisun Marsh aster.

A.28.8 Recovery Goals

A recovery plan has not been prepared for this species and no recovery goals have been established.

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